STN - Structure Search
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10/795,838

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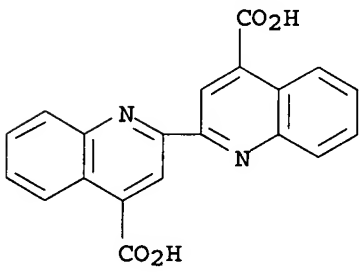
L9 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:964886 CAPLUS
DOCUMENT NUMBER: 141:417840
TITLE: Transition metal complexes from solid state synthesis
INVENTOR(S): Thummel, Randolph P.; Hu, Yi-Zhen
PATENT ASSIGNEE(S): University of Houston, USA
SOURCE: U.S. Pat. Appl. Publ., 17 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| US 2004225122 | A1 | 20041111 | US 2004-795838 | 20040308 |
| PRIORITY APPLN. INFO.: | | | US 2003-453068P P | 20030307 |

AB Methods and compns. related to the synthesis of photosensitizers of **titanium** dioxide performed in situ, stepwise, in the solid state, and directly on the surface of the **titanium** dioxide semiconductor material. The method is generally accomplished by first absorbing an anchor ligand onto the **titanium** dioxide semiconductor material, then adding an appropriate transition metal, and finally adding one or more secondary ligands to complete the synthesis of the transition metal complex or sensitizer. The method is a much simpler and more efficient synthetic technique, than many other prepns. In particular, by preparing the sensitizer directly on the surface of the **titanium** dioxide, the lengthy and tedious independent preparation and final absorption of the sensitizer onto the **titanium** dioxide is avoided. Furthermore, the amts. of material required for the in situ solid state synthesis are extremely small; the in situ solid state synthesis method also does not require purification at any stage; unwanted side products or reagents not anchored to the **titanium** dioxide are merely washed away with solvent after each preparative step (Zakeeruddin et al., 1998).

IT **1245-13-2**, 4,4'-Dicarboxy-2,2'-biquinoline
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of transition metal complex anchored **titanium** dioxide)
RN 1245-13-2 CAPLUS
CN [2,2'-Biquinoline]-4,4'-dicarboxylic acid (8CI, 9CI) (CA INDEX NAME)




L9 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:855556 CAPLUS
DOCUMENT NUMBER: 139:347692
TITLE: Determination of elements in body fluids and test kit including the necessary reagents for diagnosis of

diseaseses caused by elemental imbalances

INVENTOR(S): Rupp, Michael E.
PATENT ASSIGNEE(S): Future Data, Inc., USA
SOURCE: U.S. Pat. Appl. Publ., 13 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| US 2003203495 | A1 | 20031030 | US 2003-423130 | 20030424 |
| US 6821786 | B2 | 20041123 | | |
| WO 2003091725 | A1 | 20031106 | WO 2003-US12911 | 20030425 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| AU 2003223735 | A1 | 20031110 | AU 2003-223735 | 20030425 |
| EP 1504257 | A1 | 20050209 | EP 2003-719936 | 20030425 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK | | | | |
| JP 2005524071 | T2 | 20050811 | JP 2004-500061 | 20030425 |

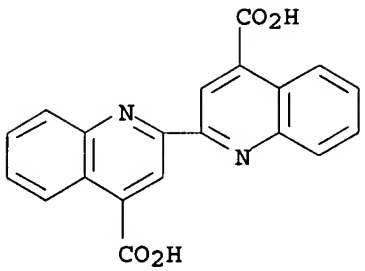
PRIORITY APPLN. INFO.:

| | | |
|---|---|---|
| US 2002-375566P | P | 20020425 |
| US 2003-423130 | A | 20030424 |
| WO 2003-US12911 | W | 20030425 |


AB A self-diagnostic test, a self-diagnostic test apparatus, and method of manufacturing a self-diagnostic test for screening for elemental mineral imbalances in a patient utilizing an anal. of the reaction of mineral specific reagents to a sample from a patient are provided. In one embodiment, the invention is directed to a test for those elements that occur naturally in the body. In such an embodiment, the invention may test for those elements that comprise about 0.001% of the body weight or less (microtrace), those elements that comprise about 4% of the body weight or less (trace), those elements that comprise up to 96% of the body weight (mass), or any combination of the above. A test strip includes series of reagent spots for the colorimetric determination of the individual elements.

IT **979-88-4**, Disodium 2,2'-bicinchoninate
RL: ARG (Analytical reagent use); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(determination of elements in body fluids and test kit including the necessary reagents for diagnosis of diseaseses caused by elemental imbalances)

RN 979-88-4 CAPLUS
CN [2,2'-Biquinoline]-4,4'-dicarboxylic acid, disodium salt (9CI) (CA INDEX NAME)



●2 Na

REFERENCE COUNT: 66 THERE ARE 66 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:23106 CAPLUS
DOCUMENT NUMBER: 138:83329
TITLE: Use of metal ion chelates in validating biological molecules as drug targets in test animal models
INVENTOR(S): Rist, Oystein; Hogberg, Thomas; Holst Lange, Birgitte; Schwartz, Thue W.; Elling, Christian E.
PATENT ASSIGNEE(S): 7TM Pharma A/S, Den.
SOURCE: PCT Int. Appl., 247 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2003003009 | A1 | 20030109 | WO 2002-DK456 | 20020628 |
| W: AE, AG, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LV, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| WO 2002054077 | A2 | 20020711 | WO 2001-DK867 | 20011221 |
| W: AE, AG, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |

| PRIORITY APPLN. INFO.: | | |
|---|---|---|
| DK 2001-1026 | A | 20010629 |
| DK 2001-1027 | A | 20010629 |
| DK 2001-1028 | A | 20010629 |
| DK 2001-1030 | A | 20010629 |

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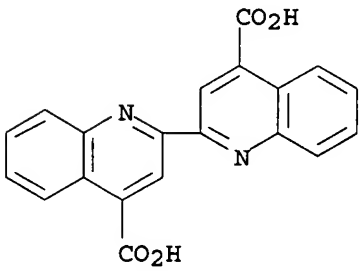
|---|---|---|
| DK 2001-1031 | A | 20010629 |
| US 2001-301931P | P | 20010629 |
| WO 2001-DK867 | A | 20011221 |
| WO 2000-EP13389 | W | 20001229 |
| DK 2001-536 | A | 20010330 |
| US 2001-280237P | P | 20010330 |

OTHER SOURCE(S): MARPAT 138:83329

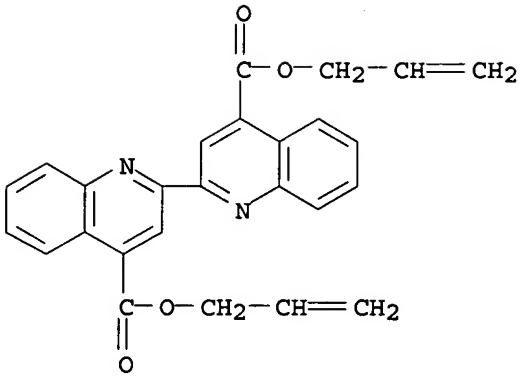
AB The invention discloses the use of chemical compds. or selections of chemical compds. (libraries) of the general Formula R1XFY(R1)GZR1 [F, G = N, O, S, Se, P; X, Y, Z = (un)branched C1-12 alkyl, aryl, heteroaryl, etc.; R1 = ABC; A = coupling or connecting moiety; B = spacer moiety; C = functional group] for in vivo methods for testing or validating the physiol. importance and/or the therapeutic or pharmacol. potential of biol. target mols., notably proteins such as, e.g., receptors and especially 7TM receptors in test animals expressing the biol. target mol. with, notably, a silent, engineered metal ion site. Use of specific metal ion binding sites of a generic nature in specific biol. target mols. such as, e.g. transmembrane proteins wherein the metal ion binding site is capable of forming a complex with a metal ion is also described. Also disclosed are chemical compds. or libraries suitable for use in methods for improving the in vivo pharmacokinetic behavior of metal ion chelates (e.g. the absorption pattern, the plasma half-life, the distribution, the metabolism and/or the elimination of the metal ion chelates). In order to improve the efficacy of the impact of the metal ion chelate on the biol. target mol. after administration of the metal ion chelate in vivo to a test animal, it is advantageous e.g. to increase the period during which the metal ion chelate is in the circulatory system and/or localized at the target. Further disclosed are metal ion-chelating compds. designed to be suitable for use in a target validation process according to the invention, as well as libraries of at least two or more of such metal ion-chelating compds.

IT **1245-13-2 318512-23-1**
RL: BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(metal ion chelates in validating biol. mols. as drug targets in test animal models)

RN 1245-13-2 CAPLUS
CN [2,2'-Biquinoline]-4,4'-dicarboxylic acid (8CI, 9CI) (CA INDEX NAME)




RN 318512-23-1 CAPLUS
CN [2,2'-Biquinoline]-4,4'-dicarboxylic acid, di-2-propenyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:23105 CAPLUS
DOCUMENT NUMBER: 138:83328
TITLE: Metal ion binding-based chemical libraries useful for drug discovery processes
INVENTOR(S): Hoegberg, Thomas; Rist, Oystein; Hjelmencrantz, Anders; Moldt, Peter; Elling, Christian E.; Schwartz, Thue W.; Gerlach, Lars Ole; Holst Lange, Birgitte
PATENT ASSIGNEE(S): 7TM Pharma A/S, Den.
SOURCE: PCT Int. Appl., 242 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2003003008 | A1 | 20030109 | WO 2002-DK455 | 20020628 |

W: AE, AG, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

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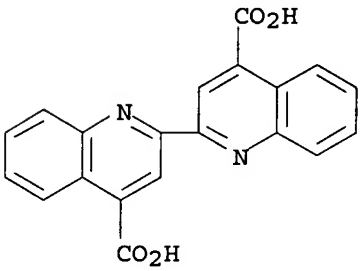
| PRIORITY APPLN. INFO.: | DK 2001-1029 | A | 20010629 |
| | DK 2001-1032 | A | 20010629 |
| | DK 2001-1033 | A | 20010629 |
| | DK 2001-1034 | A | 20010629 |
| | DK 2001-1035 | A | 20010629 |
| | US 2001-301989P | P | 20010629 |
| | US 2001-301990P | P | 20010629 |

OTHER SOURCE(S): MARPAT 138:83328
AB The invention discloses the use of chemical compds. or selections of chemical compds. (libraries) of the general formula R1XFY(R1)GZR1 [F, G = N, O, S, Se, P; X, Y, Z = (un)branched C1-12 alkyl, (hetero)aryl, etc.; R1 = H, ABC; A = coupling or connecting moiety; B = spacer moiety; C = functional group] for in vivo methods for testing or validating the physiol. importance and/or the therapeutic or pharmacol. potential of biol. target mols., notably proteins such as, e.g., receptors and especially 7TM receptors in

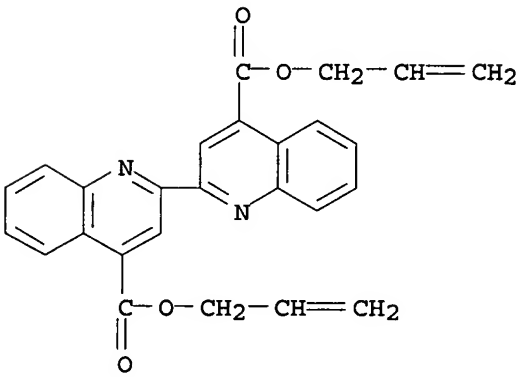
test animals expressing the biol. target mol. with, notably, a silent, engineered metal ion site. Use of specific metal ion binding sites of a generic nature in specific biol. target mols. such as, e.g. transmembrane proteins wherein the metal-ion binding site is capable of forming a complex with a metal ion is also described. The invention provides chemical compds. or libraries suitable for use in methods for improving the in vivo pharmacokinetic behavior of metal-ion chelates (e.g. the absorption pattern, the plasma half-life, the distribution, the metabolism and/or the elimination of the metal ion chelates). In order to improve the efficacy of the metal ion chelates impact on the biol. target mol. after administration of the metal ion chelate in vivo to a test animal, it is advantageous e.g. to increase the time period during which the metal ion chelate is in the circulatory system and/or localized at the target. Metal ion chelating compds., which are designed to be suitable for use in a target validation process according to the invention and to libraries of at least two or more of such metal-ion chelating compds. are disclosed.

IT **1245-13-2 318512-23-1**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(metal ion binding-based chemical libraries for drug discovery processes)

RN 1245-13-2 CAPLUS
CN [2,2'-Biquinoline]-4,4'-dicarboxylic acid (8CI, 9CI) (CA INDEX NAME)



RN 318512-23-1 CAPLUS
CN [2,2'-Biquinoline]-4,4'-dicarboxylic acid, di-2-propenyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:839272 CAPLUS
DOCUMENT NUMBER: 136:95093
TITLE: Synthesis and photophysical properties of ruthenium(II) charge transfer sensitizers containing

4,4'-dicarboxy-2,2'-biquinoline and
5,8-dicarboxy-6,7-dihydro-dibenzo[1,10]phenanthroline

AUTHOR(S): Islam, Ashraful; Sugihara, Hideki; Singh, Lok Pratap; Hara, Kohjiro; Katoh, Ryuzi; Nagawa, Yoshinobu; Yanagida, Masatoshi; Takahashi, Yoshiaki; Murata, Shigeo; Arakawa, Hironori

CORPORATE SOURCE: National Institute of Materials and Chemical Research (NIMC), Tsukuba, 305-8565, Japan

SOURCE: Inorganica Chimica Acta (2001), 322(1,2), 7-16
CODEN: ICHAA3; ISSN: 0020-1693

PUBLISHER: Elsevier Science S.A.

DOCUMENT TYPE: Journal

LANGUAGE: English

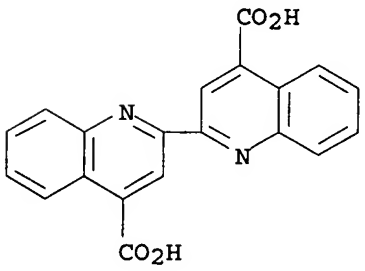
OTHER SOURCE(S): CASREACT 136:95093

AB Ruthenium(II) complexes cis-Ru(H2dcbiq)2X2 and cis-Ru(H2dcdhph)2X2, where H2dcbiq = 4,4'-dicarboxy-2,2'-biquinoline, H2dcdhph = 5,8-dicarboxy-6,7-dihydrodibenzo[1,10]phenanthroline, and X = Cl-, NCS- or CN-, were synthesized and spectroscopically characterized. The resulting complexes show a broad and intense metal-to-ligand charge transfer (MLCT) band in the visible region with a peak between 580 and 700 nm and are emissive at room temperature The ground-state 1st pKa value of cis-Ru(H2dcbiq)2(NCS)2 (2) is 2.9 by the spectrophotometric method. Photoelectrochem. measurements show that all dyes, when anchored to a nanocryst. TiO2 film electrode, present low light-harvesting efficiencies due to inefficient driving force for electron injection into the conduction band of TiO2 from their lower energy MLCT band. The photoelectrochem. performance of 2 was also studied on a number of oxide semiconductor thin films such as Nb2O5, ZnO, SnO2 and In2O3. The results show that a high value of short-circuit photocurrent (Jsc) is observed for the semiconductors having a low-energy conduction band potential (SnO2 and In2O3). In the dye 2-sensitized TiO2 film, the absorbed photon-to-current conversion efficiency (APCE) spectrum shows an absorption band selective electron injection yield, while a wavelength independent electron injection yield is observed when dye 2 is anchored to SnO2. These results indicate that the lowest excited MLCT state is energetically favorable for electron injection into the conduction band of SnO2 but not for TiO2.

IT **979-88-4**, Disodium 2,2'-biquinoline-4,4'-dicarboxylate
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant; preparation of ruthenium(II) dicarboxybiquinoline and dicarboxydihydrodibenzo[1,10]phenanthroline chloro/isothiocyanato/cyanide charge transfer sensitizer complexes)

RN 979-88-4 CAPLUS

CN [2,2'-Biquinoline]-4,4'-dicarboxylic acid, disodium salt (9CI) (CA INDEX NAME)




●2 Na

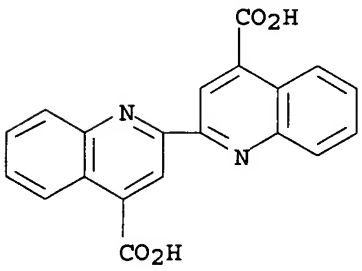
REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:753494 CAPLUS
DOCUMENT NUMBER: 128:109926
TITLE: Redox regulation in ruthenium(II) polypyridyl complexes and their application in solar energy conversion
AUTHOR(S): Nazeeruddin, Mohammad K.; Muller, Edgar; Humphry-Baker, Robin; Vlachopoulos, Nick; Gratzel, Michael
CORPORATE SOURCE: Institute of Physical Chemistry, Laboratory for Photonics and Interfaces, Swiss Federal Institute of Technology, Lausanne, CH-1015, Switz.
SOURCE: Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1997), (23), 4571-4578
CODEN: JCDTBI; ISSN: 0300-9246
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Ru(II) complexes [Ru(dmbip)(Hdcbpy)X], [Ru(dmbip)(Hdcbiq)X] and [Ru(dhbip)(Hdcbpy)X], where dmbip = 2,6-bis(1-methylbenzimidazol-2-yl)pyridine, dhbip = 2,6-bis(1-hexadecylbenzimidazol-2-yl)pyridine, H2dcbpy = 4,4'-dicarboxy-2,2'-bipyridine, H2dcbiq = 4,4'-dicarboxy-2,2'-biquinoline and X = Cl-, NCS-, CN- or H2O, were synthesized and spectroscopically characterized. They act as efficient charge-transfer sensitizers when anchored onto nanocryst. TiO2 films. The lowest-energy metal-to-ligand charge-transfer transitions in these complexes could be tuned from 500 to 590 nm by choice of appropriate ligands and the HOMO varied over 400 mV. Some of the complexes reported are emissive at room temperature The ground- and excited-state pKa values of dcbpy complexes were measured by spectrophotometric and spectrofluorometric titration Resonance-Raman spectra show bands characteristic of the dmbip and dcbpy ligand for excitation at 468 nm, while excitation at 568 nm gave predominantly bands associated with the dcbpy ligand. The excited-state pKa values and the resonance-Raman data indicate that the lowest excited state is a metal to dcbpy or dcbiq ligand charge-transfer state.

IT **1245-13-2**, 4,4'-Dicarboxy-2,2'-biquinoline
RL: RCT (Reactant); RACT (Reactant or reagent)
(for preparation of ruthenium(II) polypyridyl complexes as charge-transfer sensitizers on nanocryst. TiO2 film)
RN 1245-13-2 CAPLUS
CN [2,2'-Biquinoline]-4,4'-dicarboxylic acid (8CI, 9CI) (CA INDEX NAME)




L9 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:513073 CAPLUS
DOCUMENT NUMBER: 127:214048
TITLE: Novel sensitizers for photovoltaic cells. Structural variations of Ru(II) complexes containing

2,6-bis(1-methylbenzimidazol-2-yl)pyridine

AUTHOR(S): Ruile, Stefan; Kohle, Oliver; Pechy, Peter; Graetzel, Michael

CORPORATE SOURCE: Institut de Chimie Physique, Ecole Polytechnique Federale de Lausanne, CH-1015, Lausanne, Switz.

SOURCE: Inorganica Chimica Acta (1997), 261(2), 129-140
CODEN: ICHAA3; ISSN: 0020-1693

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

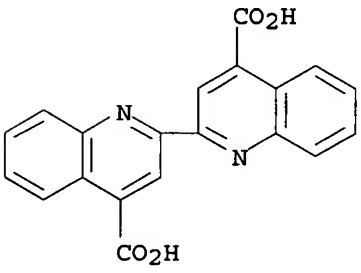
LANGUAGE: English

AB New Ru(II) complexes were synthesized for the application in photoelectrochem. solar cells based on dye-sensitized nanocryst. TiO2. Design strategies for the development of new dyes were tested via structural variations of the prototype complex K[Ru(II)(bmipy)(4,4'-dcbpy)(NCS)] (7) with bmipy = 2,6-bis(1-methyl-benzimidazol-2-yl)pyridine, and 4,4'-dcbpy = 2,2'-bipyridine-4,4'-dicarboxylate. A π* level tuning was performed by replacing 4,4'-dcbpy with the low π* level ligands dcbiq (2,2'-biquinoline-4,4'-dicarboxylate) and 5,5'-dcbpy. The resulting complexes showed decreased light-to-elec. energy conversion efficiencies. K[Ru(II)(bmipy)(4-PO3bpy)(NCS)] (4-PO3H2bpy = 2,2'-bipyridine-4-phosphonic acid) also sensitized TiO2 less efficiently than the model compound The occurrence of two isomers was observed for the complexes containing 4-PO3bpy. In Na[Ru(II)(bmipy)(4,4'-dcbpy)X] with X = substituted phenylcyanamide (pcyd-) anions, the influence of substitution on the Ph group was studied. MLCT absorption maxima of the phenylcyanamide complexes at .apprx.510 nm were shifted to lower energies in comparison with the model complex, however photoenergy conversion efficiencies were reduced. When introduced into the complex, phenylcyanamide was coordinated via the nitrile or the amido N. With prolonged reaction time, the amido-bound isomer was partially transformed into the thermodynamically more stable nitrilo-bound isomer. Linkage isomerism of coordinated NCS- and 4-Clpcyd- was studied with multinuclear NMR (1H, 13C, 31P) spectroscopy and 13C-labeled ligands. Prospects for a substantial improvement of Ru(II) polypyridyl sensitizers for TiO2 are discussed.

IT **1245-13-2**, 2,2'-Biquinoline-4,4'-dicarboxylic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(for preparation of ruthenium benzimidazolylpyridine biquinolinedicarboxylate complex)

RN 1245-13-2 CAPLUS

CN [2,2'-Biquinoline]-4,4'-dicarboxylic acid (8CI, 9CI) (CA INDEX NAME)




REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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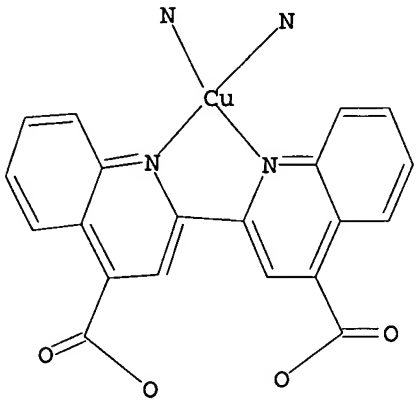


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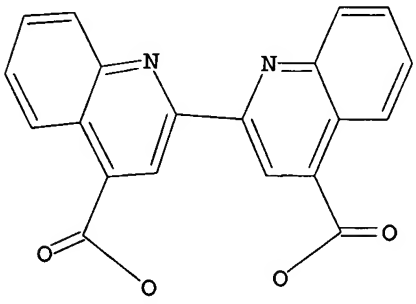


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